

Analysis of the Questions Asked Through Digital and Face-to-Face Reference Services*

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In Japan, only a few public libraries provide e-mail reference services. To help public libraries start e-mail reference services, the authors investigated reference questions received by libraries via e-mail and traditional face-to-face services. The authors found that research questions are more frequently observed among e-mail questions and questions about the local area are slightly more frequently observed. Librarians who are planning to start e-mail reference services should be aware of these tendencies.

Keywords: reference questions, e-mail reference services, digital reference services, question types, public libraries

Introduction

In Japan, only a few public libraries provide e-mail reference services. Tsuji, To, and Hara (2011) found that only 15.6% (31 out of 199) of municipal libraries in the Kanto area are providing them. However, considering that almost all the prefectural libraries are providing e-mail reference services and the Internet environment is becoming increasingly prevalent, many municipal libraries will be asked to provide e-mail reference services in the near future. They should thus begin to prepare for it. The authors investigated reference questions received by libraries via e-mail and traditional face-to-face services. If there are differences between the two, such information can be used to start e-mail reference services efficiently and effectively.

Related Studies

Katz (2002) classified reference questions into four categories: (1) direction; (2) ready reference; (3) specific search; and (4) research. Based on this, Sears (2001) classified questions into the following categories (although the Sears reference predates the Katz reference): (1) reference questions (ready reference, specific search, and research); (2) policy and procedural questions (database instructions, passwords, etc., library policy clarification, and availability of a specific library service); and (3) directional questions (location within the physical library environment, location on the library's Website, and location of places within the city or state). These categories can be seen with some variations in researches (Smyth, 2003; Arnold & Kaske, 2005; Ryan, 2008; Kwon, 2007; Numminen & Vakkari, 2009; Pomerantz, 2005). Pomerantz (2005) also proposed other

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aspects of classification, such as subjects (topics) of question (Pomerantz, 2005).

Investigations

In this section, the authors will explain the reference questions investigated and our classification schema.

Reference Records

The authors asked six prefectural and four municipal libraries to provide their reference records. Two prefectural and three municipal libraries agreed to our request; however, one library provided only a small number of records and one provided only the face-to-face ones. Therefore, the authors adopted the reference records of one prefectural library (Saitama Prefectural Libraries) and two municipal libraries (Yokohama City Central Library and Narita Public Library) for the sample. The number of reference questions and periods during which they were collected are shown in Table 1 (henceforth, “*N*” represents the number of samples). The authors can see, for instance, that Saitama Prefectural Libraries provided 99 face-to-face reference questions and 62 e-mail reference questions.

The problems of our sample are as follows: (1) It is not clear what kind of questions were recorded in each library and which policies were different from each other; (2) The periods during which the questions were collected were different from each other; and (3) Saitama Prefectural Libraries and Yokohama City Central Library only provided questions that were submitted to the reference record database maintained by the National Diet Library (i.e., Collaborative Reference Database); what kinds of questions were chosen from their records and submitted to the database is unclear. The authors leave all of these for future research.

Table 1

Number of Questions and the Period During Which They Were Collected

		<i>N</i>	Period
Saitama Prefectural Libraries	E-mail	99	(April 2010 to March 2011)
	Face-to-face	62	(April 2010)
Yokohama City Central Library	E-mail	49	(July 2010 to November 2010)
	Face-to-face	34	(July 2010 to October 2010)
Narita Public Library	E-mail	6	(April 2002 and from July 2010 to December 2010)
	Face-to-face	132	(April 2002 to September 2004)

Question Types

Based on the classification schema in the related studies, the authors classified the reference questions into the following categories (henceforth, the authors call these categories traditional schema). Some definitions and examples were borrowed from Katz (2002) and Numminen and Vakkari (2009).

(1) Ready reference: Questions of a factual nature that can be answered quickly by consulting only one or two reference tools:

(a) Bibliography of known item: Questions requesting certain bibliographic information.

e.g., Who is the author of the book “silent spring”?

(b) Holdings of known item: Questions asking whether the library holds certain books or not.

e.g., Do you have “silent spring”?

(c) Fact-finding: Factual questions that can be answered easily.

e.g., How long is the Amazon River?

(2) Specific search questions: Questions which need books or lists of citations to answer. They are more difficult than ready reference questions and easier than research questions:

- e.g., What is the difference between the conservative and the liberal views on inflation and unemployment?
- (3) Research questions: Questions requesting a particular kind and number of books or articles, etc., on a specific topic or wanting clarification of a certain topic or matter:
- (a) Topic: Questions requesting material or information on a certain topic.
e.g., What books are being written of knur works and making of them?
- (b) Research: Factual questions or questions dealing with certain items or topics requiring clarification and explication and many resources to answer.
e.g., When a child draws a house, there usually is a tree beside the house. What does this tree symbolize? A brown trunk and a green "hat"?
- (c) Person: Questions requesting information about a certain person.
e.g., Do you have material concerning the explorer Francisco de Orellana?
- (4) Policy and procedural questions:
- (a) Library policy: Questions dealing with library policy and the availability of a specific library service.
e.g., How are books selected and acquired by the library?
- (b) Access to e-resources: Questions dealing with the availability and use of e-resources.
e.g., How can I use the Web of science?
- (5) Directional questions:
- (a) Location of physical items: Questions regarding the location of some item or service within the physical library environment.
e.g., Where is the catalog?
- (b) Location in library homepage: Questions dealing with the location of some service within the library's Website.
e.g., Where can I order inter-library loan in your homepage?
- (c) Location of library: Questions about the location of the library.
e.g., How can I get to your library by car?
- (6) Others: Questions fitting not into the other categories and also notes of thanks and suggestions regarding improving the service:
e.g., Warm thanks for your excellent answers.

In addition, the authors classified questions by: (1) subject, based on the NDC (Nippon Decimal Classification); and (2) whether the questions are about the local area or not.

Results and Discussions

In this section, the authors initially indicate the basic results, followed by the results according to the subjects based on NDC and whether the questions are about the local area or not.

Classification by Traditional Schema

Results of traditional schema classification of reference questions received by Saitama, Yokohama, and Narita libraries are shown in Tables 2, 3, and 4, respectively. Concerning Saitama Prefectural Libraries, the ratio of research questions of "person" among e-mail questions (7.1%) is higher than that among face-to-face questions (1.6%). The statistical difference is at the level of 0.05. Similarly, at Yokohama City Central Library, the ratio of research questions of "topic" among e-mail questions (38.8%) is statistically higher (at the level of 0.01) than that among face-to-face questions (8.8%). Concerning Narita Public Library, the ratios of research questions of "topic" and "research" among e-mail questions are both statistically higher (at the level of 0.01) than those among face-to-face questions (on the other hand, the ratios of Specific search questions among e-mail questions of these three libraries are lower than those among face-to-face questions). In this respect, the authors can say that research questions are more frequently observed in e-mail questions than in face-to-face ones, and in that sense, the former are more difficult to answer than the latter. The examples of research

questions via e-mail are shown in Table 5.

Table 2

Number of Questions Classified by Traditional Schema: Saitama Prefectural Libraries

Reference questions		E-mail		Face-to-face	
		<i>N</i>	(%)	<i>N</i>	(%)
Ready reference	Bibliography of known-item	12	12.1	2	3.2
	Holdings of known-item	26	26.3	14	22.6
	Fact-finding	9	9.1	3	4.8
Specific-search questions		28	28.3	30	48.4
Research questions	Topic	5	5.1	5	8.1
	Research	7	7.1	1	1.6
	Person	9	9.1	1	1.6
Policy & procedural questions	Library policy	3	3.0	5	8.1
	Access to e-resources	0	0.0	0	0.0
	Location of physical items	0	0.0	1	1.6
Directional questions	Location in library homepage	0	0.0	0	0.0
	Location of library	0	0.0	0	0.0
Others		0	0.0	0	0.0
Total		99	100.0	62	100.0

Table 3

Number of Questions Classified by Traditional Schema: Yokohama City Central Library

Reference questions		E-mail		Face-to-face	
		<i>N</i>	(%)	<i>N</i>	(%)
Ready reference	Bibliography of known-item	0	0.0	3	8.8
	Holdings of known-item	3	6.1	6	17.6
	Fact-finding	1	2.0	2	5.9
Specific-search questions		14	28.6	16	47.1
Research questions	Topic	19	38.8	3	8.8
	Research	10	20.4	3	8.8
	Person	2	4.1	1	2.9
Policy & procedural questions	Library policy	0	0.0	0	0.0
	Access to e-resources	0	0.0	0	0.0
	Location of physical items	0	0.0	0	0.0
Directional questions	Location in library homepage	0	0.0	0	0.0
	Location of library	0	0.0	0	0.0
Others		0	0.0	0	0.0
Total		49	100.0	34	100.0

Classification by Subjects Based on NDC

Results of NDC-derived subject classification of reference questions to Saitama, Yokohama, and Narita libraries are shown in Table 6. Concerning Saitama Prefectural Libraries, the most frequently observed category among both e-mail and face-to-face questions was “7 (art)” (32.3% and 22.6%, respectively). On the one hand, concerning Yokohama City Central Library and Narita Public Library, the most and second-most frequently observed categories among e-mail and face-to-face questions were “2 (history)” and “3 (social

science)” (for instance, 42.9% for “3” and 24.5% for “2” concerning e-mail questions to Yokohama City Central Library). The difference might be caused by the contrast in nature between prefectural libraries (Saitama) and municipal libraries (Yokohama and Narita). However, it might be caused by the difference of histories of cities. Yokohama is famous as a historic port town which was opened to U.S. in 1859. Narita is also famous for the Naritasan Shinshoji Temple (since 940) and residents’ fierce campaign dating back to the 1960s against the building of Narita International Airport. On the other hand, Saitama is not a historically famous city or prefecture.

Table 4

Number of Questions Classified by Traditional Schema: Narita Public Library

Reference questions		E-mail		Face-to-face	
		N	(%)	N	(%)
Ready reference	Bibliography of known item	0	0.0	8	6.1
	Holdings of known item	0	0.0	14	10.6
	Fact-finding	1	16.7	27	20.5
Specific-search questions		0	0.0	66	50.0
Research questions	Topic	3	50.0	10	7.6
	Research	2	33.3	2	1.5
	Person	0	0.0	5	3.8
Policy & procedural questions	Library policy	0	0.0	0	0.0
	Access to e-resources	0	0.0	0	0.0
	Location of physical items	0	0.0	0	0.0
Directional questions	Location in library homepage	0	0.0	0	0.0
	Location of library	0	0.0	0	0.0
Others		0	0.0	0	0.0
Total		6	100.0	132	100.0

Table 5

Examples of Research Questions via E-mail

(a)	When and why was the brick tunnel in 3 cities of Hongo-cho, Naka-ku, and Yokohama built?
(b)	I would like to know the self-governing organ of foreigners in the enclave in Yokohama.
(c)	I would like to read newspaper articles on the fighter plane Shinshogo which was donated to military by Naritasan Shinshoji Temple in 1938 or 1939.
(d)	Why there are two different origins for Ouragobo?
(e)	I would like to know the characteristics of memorial services for the war dead from Kamakura Era to the present.
(f)	I would like to know the population and age structure in Kanto area in late Jomon Era.

The difference between e-mail questions and face-to-face questions was not observed concerning the ratio of NDC categories. Therefore, librarians who plan to start e-mail reference services might not need to prepare for answering questions whose NDC-based subjects are different from face-to-face questions.

In the previous section, research questions were more frequently observed among e-mail questions than among face-to-face ones. The distribution of NDC categories among e-mail research questions is shown in Table 7. The distribution is similar to that in Table 6. The NDC category “7” is the most common among Saitama e-mail research questions and categories “2” and “3” are the most common among Yokohama and Narita e-mail research questions.

Table 6

Number of Questions Classified by Subjects Based on the NDC

			0	1	2	3	4	5	6	7	8	9	Total
Saitama Prefectural Libraries	E-mail	N	1	2	8	6	8	6	1	32	4	31	99
		(%)	1.0	2.0	8.1	6.1	8.1	6.1	1.0	32.3	4.0	31.3	100.0
	Face-to-face	N	2	1	9	9	10	5	4	14	1	7	62
		(%)	3.2	1.6	14.5	14.5	16.1	8.1	6.5	22.6	1.6	11.3	100.0
Yokohama City Central Library	E-mail	N	1	1	12	21	4	5	2	2	0	1	49
		(%)	2.0	2.0	24.5	42.9	8.2	10.2	4.1	4.1	0.0	2.0	100.0
	Face-to-face	N	3	3	8	7	4	2	1	5	0	1	34
		(%)	8.8	8.8	23.5	20.6	11.8	5.9	2.9	14.7	0.0	2.9	100.0
Narita Public Library	E-mail	N	0	0	1	3	1	1	0	0	0	0	6
		(%)	0.0	0.0	16.7	50.0	16.7	16.7	0.0	0.0	0.0	0.0	100.0
	Face-to-face	N	5	13	25	32	14	3	6	16	5	13	132
		(%)	3.8	9.8	18.9	24.2	10.6	2.3	4.5	12.1	3.8	9.8	100.0

Table 7

Number of Research Questions Classified by Subjects Based on the NDC

		0	1	2	3	4	5	6	7	8	9	Total
Saitama Prefectural Libraries	N	0	1	2	4	1	1	0	9	0	3	21
	(%)	0.0	4.8	9.5	19.0	4.8	4.8	0.0	42.9	0.0	14.3	100.0
Yokohama City Central Library	N	0	1	8	13	3	5	1	0	0	0	31
	(%)	0.0	3.2	25.8	41.9	9.7	16.1	3.2	0.0	0.0	0.0	100.0
Narita Public Library	N	0	0	1	2	1	1	0	0	0	0	5
	(%)	0.0	0.0	20.0	40.0	20.0	20.0	0.0	0.0	0.0	0.0	100.0

Classification of the Questions About the Local Area

The numbers and ratios of questions about the local area are shown in Table 8. The authors can see that questions about the local area are slightly more frequently observed among e-mail questions than among face-to-face ones. For instance, ratios of questions about the local area concerning Yokohama City Central Library are 28.6% and 23.5%, respectively (i.e., $28.6 = 14/49 \times 100$ and $23.5 = 8/34 \times 100$, respectively). These three libraries do not allow residents outside their prefecture and city to ask questions via e-mail. The only exceptions are questions about their local area. It might explain the above-mentioned results.

Table 8

Numbers and Ratios of Questions About the Local Area

		Questions about the local area	
Saitama Prefectural Libraries	E-mail	11	(11.1)
	Face-to-face	6	(9.7)
Yokohama City Central Library	E-mail	14	(28.6)
	Face-to-face	8	(23.5)
Narita Public Library	E-mail	4	(66.7)
	Face-to-face	37	(28.0)

The authors classified the questions about the local area based on the traditional schema of reference

questions. The results are shown in Table 9. In addition, the authors classified the questions about the local area by NDC-derived subject. The results are shown in Table 10. It can be seen in Tables 9 and 10 that, concerning Yokohama and Narita, research questions and questions about history (“2” in the NDC) and social science (“3” in the NDC) are frequently observed among questions about the local area. It might be explained by their histories, as mentioned in the previous section.

Table 9

Number of Questions About Local Area via E-mail Classified by Traditional Schema

Reference questions		Saitama		Yokohama		Narita	
		<i>N</i>	(%)	<i>N</i>	(%)	<i>N</i>	(%)
Ready reference	Bibliography of known item	0	0.0	0	0.0	0	0.0
	Holdings of known item	4	36.4	0	0.0	0	0.0
	Fact-finding	1	9.1	1	7.1	0	0.0
Specific-search questions		3	27.3	3	21.4	0	0.0
Research questions	Topic	0	0.0	3	21.4	2	50.0
	Research	0	0.0	5	35.7	2	50.0
	Person	2	18.2	2	14.3	0	0.0
Policy & procedural questions	Library policy	1	9.1	0	0.0	0	0.0
	Access to e-resources	0	0.0	0	0.0	0	0.0
Total		11	100.0	14	100.0	4	100.0

Table 10

Number of Questions About the Local Area via E-mail Classified by NDC Subject

		0	1	2	3	4	5	6	7	8	9	Total
Saitama Prefectural Libraries	<i>N</i>	1	0	2	2	0	1	0	3	0	2	11
	(%)	9.1	0.0	18.2	18.2	0.0	9.1	0.0	27.3	0.0	18.2	100.0
Yokohama City Central Library	<i>N</i>	0	0	8	3	0	2	1	0	0	0	14
	(%)	0.0	0.0	57.1	21.4	0.0	14.3	7.1	0.0	0.0	0.0	100.0
Narita Public Library	<i>N</i>	0	0	1	2	0	1	0	0	0	0	4
	(%)	0.0	0.0	25.0	50.0	0.0	25.0	0.0	0.0	0.0	0.0	100.0

Conclusions

The authors investigated e-mail and face-to-face reference questions and found that research questions are more frequently observed among e-mail questions. In addition, questions about the local area are slightly more frequently observed among e-mail questions. Librarians who are planning to start e-mail reference services should be aware of these tendencies in order to provide efficient and effective service. Future tasks are: (1) collecting more sample questions from more libraries; (2) investigating e-mail questions from libraries that allow non-residents to ask any types of questions (unlike the present paper’s three libraries); and (3) interviewing librarians who are in charge of e-mail reference services and collecting information to provide the service efficiently and effectively.

References

- Arnold, J., & Kaske, N. (2005). Evaluating the quality of a chat service. *Libraries and the Academy*, 5(2), 177-193.
 Katz, W. A. (2002). *Introduction to reference work, Vol. 1: Basic information services*. Boston: McGraw-Hill.

- Kwon, N. (2007). Public library patrons' use of collaborative chat reference service: The effectiveness of question answering by question type. *Library & Information Science Research*, 29, 70-91.
- Numminen, P., & Vakkari, P. (2009). Question types in public libraries' digital reference service in Finland: Comparing 1999 and 2006. *Journal of the American Society for Information Science and Technology*, 60(6), 1249-1257.
- Pomerantz, J. (2005). A linguistic analysis of question taxonomies. *Journal of the American Society for Information Science and Technology*, 56(7), 715-728.
- Ryan, S. M. (2008). Reference transactions analysis: The cost-effectiveness of staffing a traditional academic reference desk. *The Journal of Academic Librarianship*, 34(5), 389-399.
- Sears, J. (2001). Chat reference service: An analysis of one semester's data. In *Issues in science and technology librarianship*. Retrieved from <http://www.library.ucsb.edu/istl/01-fall/article2.html>
- Smyth, J. (2003). Virtual reference transcript analysis: A few models. *Searcher*, 11(3), 26-30.
- Tsuji, K., To, H., & Hara, A. (2011). Accuracy of answers provided by digital reference services in Japanese public libraries: With special reference to those of face-to-face reference services and q & a sites. *Toshokankai (Library World)*, 62(5), 348-363. (In Japanese)